MARCH 1987

COLORADO SPRINGS, COLORADO

PIKES PEAK RADIO AMATEUR ASSOCIATION, INC.
P.O. Box 16521
Colorado Springs, CO 80935

FIRST CLASS MAIL

Ø BEAT

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ZERO BEAT is published monthly in the interest of the members of the Pikes Peak Radio Amateur Association, Inc., P.O. Box 16521, Colorado Springs, Colorado 80935. Cost is 50¢ per month for non-members or a $4.00 per year subscription. Permission is given to reprint articles or excerpts provided credit is given. Deadline for submission of articles is the 21st of the month. Classifieds accepted anytime.

The Pikes Peak Radio Amateur Association meets on the second Wednesday of each month at Giuseppe's Depot Restaurant at 10 S. Sierra Madre at 7:30 p.m. All amateurs and interested parties are invited to attend.

Editor: Phil Somers VE1ARC, 1075 Allegheny Dr. Colorado Springs, CO 80919 590-7136

YOUR NEW BOARD MEMBER

NICK HULBERT - KG5N

As a new board member I have had the opportunity to participate in two board meetings thus far. I would like to mention at this time to the membership how fortunate the club is to have such concerned officers and board members. I thank you for the chance to work with them.

Now for a little "new board member" history. I was orginally licensed in 1963 under the call WN6FRC. I was the product of the local club novice class. The novice license then was good for 1 year and you either upgraded or dropped out. I chose to upgrade and passed my tech license 3 weeks before my novice expired. Two years later when I was sixteen and had a motorcycle I drove into Los Angeles (60 miles) and passed my general. When incentive licensing hit I went after the advanced ticket and finally after moving to Texas in 1978 I passed the extra exam. I will be eligible for OCWA in June next year. In that time period I somehow found time for Jr. high school, high school, College, Air Force, and more college.

I enjoy working CW on 40 meters and like to home brew as much as time will allow. Field day is always a favorite. My daughter Shannon (11 yrs) just recently passed her novice ([illegible]) and she is now studying for her general. I am not too active yet except for 2M and a [illegible] for [illegible] CW. But I am building a room in the garage for a shack and should be more active in a month or two on HF. Shannon is on me pretty much continuous to finish the room now that she has her ticket. My other interests are computers, wood working, and hiking.

I have been employed by Texas Instruments for 10 years and was transfered to Colorado Springs in October 1985. I work as a design engineer in the electronic warfare systems group. I am presently working on a radar system for the NATO European countries of Britian, West Germany, and Italy. The radar system will be used on the Tornado aircraft. I enjoy the job very much and have been very fortunate to have been involved in both RF and digital aspects of the design. Variety is the spice of life they say ! HI HI. By the way, I must thank Amateur Radio for the spark of interest that guided my choice of occupations. Although sometimes I wake up in a cold sweat after having a nightmare about passing the state bar exam to become a lawyer. HI HI. (no "dig" intended, just not for me).

Finally, after living in Texas for eight years among the natives I have come to realize why they visit Colorado so often. Colorado is considered part of the Texas state parks and recreation service. (Wait !!!, don't write the governor of Texas—I made that up.)

73's 4 NN
de Nick Hulbert KG5N, Board Member

"A VIEW FROM THE PEAK"

by George Hinds, N8CIX
with Andy Freeborn, NØCCZ
and Al Vrooman, NØCMW

- PACKET - IT'S ROLLING ALONG -

Not yet active on packet, I found it difficult to gather information just by listening around. So, I turned to a couple of fellows who know their way in packet radio communication to help prepare this article: NØCCZ and NØCMW; my thanks to them for much of what follows.

Much has been published of late to help one get on the air with packet; here we'll confine ourselves to non-technical stuff: the activity up and down the Front Range and around the region so that you'll know what's out there for you when you turn on your packet station.

When beginning a new project in ham radio, information is very much a necessity. **You** can enhance your enjoyment of packet and keep informed about local/regional and national packet activity by joining the "Rocky Mountain Packet Radio Association." You'll receive "Packet Radio Magazine" monthly plus the RMPRA quarterly newsletter; it's just $20 the first year and $15 thereafter. You can send your check to Norm Miller NØENN, 2226 Alpine Drive, in Colorado Springs, CO 80909.

Packet began here in 1982. The frequency used often depended upon what crystal one had in the rig rather than an agreed-upon band plan. As packet grew, uniformity in frequency use followed. Today, 145.01 is considered to be the "long haul" assignment. For local station-to-station contacts, 145.03, .05, .07, and .09 will be used.

Now a network of digipeaters exists. Local packet stations can work well up into WY and SD. From Colorado Springs, using a path via northeast Colorado, one can work into Nebraska. To the south, the linking path to New Mexico is under construction and should be in service by this spring.

A northwesterly route through Colorado into Utah has linked us to California earlier; weather related problems did knock this out temporarily but it should reopen soon.

With systems coming on-line almost everywhere throughout the west and the plains to the east, it is but a matter of time: you'll be able to routinely communicate via packet toward the border with Canada and Mexico, to the Pacific, and to east of the Mississippi.

Not to be overlooked is the fact the much of packet already is going coast-to-coast and border-to border via HF - packet certainly is not confined to VHF alone. It's up to you: use VHF, or HF, or go all the way and use both methods. In fact, a recent survey about packet activity by a national ham magazine indicated that many of the replies it received to its poll came via HF packet.

It's tough to keep up with a mode that is advancing so rapidly. One very welcome benefit of the growing number of packeteers can be found in the establishment of alternate routes for linking - if you can't establish a contact with California, for example, through Utah stations, alternate routing will soon be available via New Mexico and Arizona into the Golden State. And so it goes...

A midwest to east coast example: From Ohio to New York/New Jersey by VHF packet radio is now a daily occurence using the store and forward capability of several stations along the route through Pennsylvania each way. For example one will see messages initiated at midnight in Cleveland be waiting for the receiving station to pick up upon awakening in the a.m.

Obviously, complete western and plains states coverage will be forthcoming in the not-too-distant future. VHF, along with HF, will be coordinated to enhance the traffic handling services of amateur radio in the U.S. and Canada.

The simplex "store and forward" capability of VHF packet is an obvious means to provide long range linkups at much less expense than by voice repeater linking.

Without question, we'll see packet take its place in public service communications via VHF and HF - anywhere that print and hard-copy are advantageous. Weather nets, marathons and races, simulated or real emergencies, all can benefit from amateur radio packet. Many amateurs are busily constructing portable packet stations to be carried and setup wherever and whenever the need arises. Voice mode "misunderstandings" are virtually eliminated through packet, an added benefit of this mode.

Exciting as the growth of ham packet radio is, perhaps the best is yet to come - within a year, more or less. New systems will be on-line that will be a quantum leap ahead of what is available today. But note this fact: these new systems are being designed so as to be compatible with present equipment.

Developments today in the planning and talking stage will be moving amateur radio packet to the forefront of reliable communication; if you want to tackle something new in ham radio, now is the best time of your life to get active on packet.

"Packet Maps" of Colorado, along with local and statewide rosters of stations known to be on packet, are maintained by Ole Olson KCØRL. These can be found on local bulletin board systems; Ole updates about twice a month.

73 --- George, Andy and Al -

NOVICE ENHANCEMENT

Downloaded from WBØBLV Packet BBS

HR ARRL BULLETIN NR 13A
FROM ARRL HEADQUARTERS
NEWINGTON CT FEBRUARY 11, 1987
TO ALL RADIO AMATEURS BT

FCC TODAY RELEASED THE REPORT AND ORDER IN PR DOCKET 86 161, NOVICE ENHANCEMENT. THE RULES BECOME EFFECTIVE 0001 UTC MARCH 21, 1987, A FRIDAY NIGHT, LOCAL TIME. SPECIFIC RULES CHANGES ARE,

1. NOVICES AND TECHNICIANS MAY OPERATE 28.1 THROUGH 28.5 MHZ, USING CW AND DIGITAL MODES FROM 28.1 TO 28.3 AND CW AND VOICE MODES FROM 28.3 TO 28.5 MHZ. NOVICE AND TECHNICIAN CONTROL OPERATORS ARE LIMITED TO 200 WATTS OUTPUT IN THIS BAND, BUT OTHER LICENSEES ARE NOT SIMILARLY LIMITED.

2. NOVICES MAY USE UP TO 25 WATTS IN THE 222.10 THROUGH 223.91 MHZ BAND, WITH ALL AUTHORIZED EMISSIONS.

3. NOVICES MAY USE UP TO 5 WATTS IN THE 1270 THROUGH 1295 MHZ BAND, WITH ALL AUTHORIZED EMISSIONS.

4. NO AMATEUR STATION AT WHICH THE CONTROL OPERATOR OR STATION LICENSEE HOLDS A NOVICE CLASS OPERATOR LICENSE SHALL BE IN REPEATER, AUXILIARY, OR BEACON OPERATION.

5. TWO EXAMINERS WILL BE REQUIRED TO ADMINISTER FUTURE NOVICE EXAMS, WHICH SHALL CONSIST OF 30 QUESTIONS. FCC FORM 610 WILL BE REVISED TO PROVIDE FOR CERTIFICATION BY TWO VES.

6. PRESENT NOVICE AND TECHNICIAN LICENSEES ARE GRANDFATHERED INTO THE NEW PRIVILEGES.

7. ELEMENT 3 IS DIVIDED INTO TWO PARTS, 3A AND 3B , WITH EACH EXAMINATION TO CONSIST OF 25 QUESTIONS. PRESENT TECHNICIAN LICENSEES WILL BE GIVEN CREDIT FOR HAVING PASSED BOTH ELEMENTS. IN THE FUTURE, UPGRADES TO TECHNICIAN WILL ONLY HAVE TO PASS ELEMENT 3A AND FUTURE TECHNICIANS UPGRADING TO GENERAL WILL HAVE TO PASS BOTH ELEMENTS 1B, 13 WPM, AND ELEMENT 3B. THE COMPLETE TEXT OF THE NEW RULES WILL APPEAR IN APRIL QST

VHF & ABOVE NEWS
by NKØP

NOVICE ENHANCEMENT is the hottest news this month. Just how much this increases activity on 220 and 1270MHZ is uncertain but I'll bet the major equipment manufactureres are staying up late dreaming up new gear! Since we have a 220 group in town we should see an increase in repeater use. I heard a rumor that a 1270MHZ repeater may not be to long in coming to the area.

The results of the 1st 10GHZ contest are out. A total of 52 entries were recorded with 4 from Colorado. Power ranged from 5mw to 10watts with a large variety of equipment mostly homebrew. congratulations to AAØP who had the best score in the Ø call area. Hopefully next year we can particpate from pikes peak!

February saw a few six meter openings both west and east. Also 2meters showed some promise at the end of the month but not here in Colorado.

If you have ever used GASFET devices the following short article from the '86 Microwave update should be interesting.

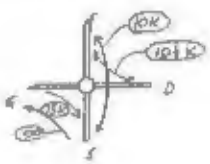
TESTING GaAs FETS

Kent Britain, WA5VJB

When Al Ward, W5SLUA, suggested checking a GaAs FET with an Ohm meter, I gasped!

Use a regular VOM powered by a 1½ volt battery (no 120 VAC powered DVM's!) and a 10 Kῼ resistor. Also, don't forget usual static precautions.

Typical readings



The .01 Ma of current used doesn't bother the gate, and the 1½V is well below all breakdown voltages. With different companies using different designations for the Gate, this test sure can be useful.

The next Front Range Microwave meeting will be March 19th. For more info contact NKØP. Thats news for now 73's and CU on the bands Ron NKØP

OUT-OF-TOWN VE TEST SCHEDULE

Pueblo Police Department
Academy Training Room
130 Central Main
Peublo , CO 81002

Send applications to
Jon Mihalick, WBØYES
1050 Baxter Road
Pueblo, CO 81006 948-2291

Apr 11	May 30	Jul 18,
Sep 5	Oct 24	Dec 12

Bemus Library,
6014 S. Datura
Littleton, CO

9:00 AM

Mar 7	Apr 4	May 2
Jun 6	Jul 11	Aug 1
Sep 5	Oct 3	Nov 7
Dec 5		

Info: Call Tony 773-2087

ANTENNAS

by Chris Smith
WBØDHU

In the cold of winter, the joy of antennas does not include working on them. Perhaps the UHF types can bring an errant aerial inside the shack for repair, but for the HF buffs, antenna work awaits a warmer season. So winter becomes a natural time to build, buy and collect antenna accessories for the shack. This month's column will look at some of the possibilities.

First in order of importance would be an antenna tuner. These are also called transmatches, matchboxes, or antenna matchers. My friend G4BWH calls them "ATUs" for antenna tuning units, and since the English invented the language, I suppose he's right. In any case, these are all pieces of equipment which allow a transmitter to deliver full power into a less than perfect antenna, by adjusting the resistance to that required by the transmitter (usually 50 ohms) and removing the reactance.

Why are these first in importance? Even though we all strive to have perfect antennas on each and every band, there are times when it might be important to operate into a random wire load. Emergency service is one such time, and every ham is obligated to make an effort to provide some level of emergency communications capability. That's one of the reasons the government grants you a license. Field Day is another such time.

What makes a good antenna tuner? There are many designs being marketed. Pretty much all of them work to some extent. I look for wide component value variation. For example, if a tuner has a shunt capacitor in the circuit, what is the minimum and maximum capacitance it can have? Experience seems to indicate that most antenna tuners suffer from a lack of component range.

Another thing to look for is the type of inductors it uses. In my opinion, the choices from best to worst are roller variable inductors, tapped airwound inductors, and tapped toroidal wound inductors. Toroidal inductors are wound on ferrite or powdered iron cores, which can become non-linear at high currents. This does funny things to your signal - all bad.

Be sure to get a tuner rated above your operating power level. Most commercial gear is rated for the power it will take into a good resistive load. This allows companies to advertise great sounding specs. The real world isn't so kind, and you'll probably find the typical load for which you need the tuner is a short wire - very reactive and very low resistance. So allow plenty of margin in the power rating. Allow even more if the tuner uses toroidal inductors.

Next in line for antenna related shack accessories is an copy of the ARRL Antenna Book. It is one of the best references on the subject available. It is remarkable that it does such a correct job of explaining antennas without higher math. It needs to be read in order to work, though.

One tool that I've used in the past and have added to my shack is an antenna noise bridge. There are several good ones on the market- both the MFJ and the Palomar Engineers models have worked to my satisfaction. They aren't as convenient as an HP network analyzer with a sweep oscillator, but they are about $40,000 cheaper. Look for the kind that gives you both resistance and reactance information. There are a couple made that only give resistance, and one that only tells you if you are matched to 50 ohms. These are primarily used in adjusting an antenna tuner, and are not a general purpose instrument.

Before I wrap this column up, I should mention another accessory that I've recently gotten and that I like. It's a Cushcraft LAC-3 through-the-wall antenna discharge unit. Actually it's a convenient way of getting coax through a wall from 2-1/2 to 5 inches thick. It takes a hole 5/8 inch, but if you are willing to do that to your shack, you get a solid connection, convenient grounding on either side of the wall, and static discharge protection. Note

that it is not a lightning arrestor. I don t believe there is any device on the market that can survive lightning and leave you rig unharmed. But if you ever left the coax from a dipole dangling when there is a high wind or dry blowing snow outside, you ve probably seen and heard the static discharging across the coax connector. The LAC-3 has some sharp points across the conductors inside the coax, which should arc at a lower voltage than a connector would. It would reduce the risk of getting a shock off the coax, though the best solution is to ground the antenna when it is not in use.

If winter has got you trapped indoors, just remember. It s nature s way of reminding you to consider the inside end of your coax.

WANTED

Any 432 multimode transceiver.

Mike - KØTER - 636-1290

Bits from the BBS
by Bdale Garbee, N3EUA

The biggest news on the phone BBS this month is that we are once again connected into the international short-wave listener s conference. This conference is part of the Echomail facility on the BBS. What this means is that any message that is entered into the SHORTWAVE message area on the HIP Shack will be copied into the equivalent area on all of the other BBS systems around the world that are part of this conference. Hams and non-hams alike should find the reception reports and equipment reviews interesting!

Several issues of the Sweden Calling DX'ers newsletter have been obtained and placed in the bulletins/newsletters file area. If you re interested in seeing more of this kind of information, let me know!

The only software news of note this month is the release of another revision of the KA9Q TCP/IP Internet software. The new revision includes several neat features. First, routing can now be specified by clusters, in addition to by individual addresses. This is a major step towards automatic route handling. Secondly, the latest version of the code allows for use of an IP site as a digipeater, and allows for packets to be pushed through digipeaters. While this is of little long-term significance, it will allow for more people to become involved in using TCP/IP NOW. Support has also been added to the package for VADCG and ASHBY TNC units, and the HAPN PC plug-in card.

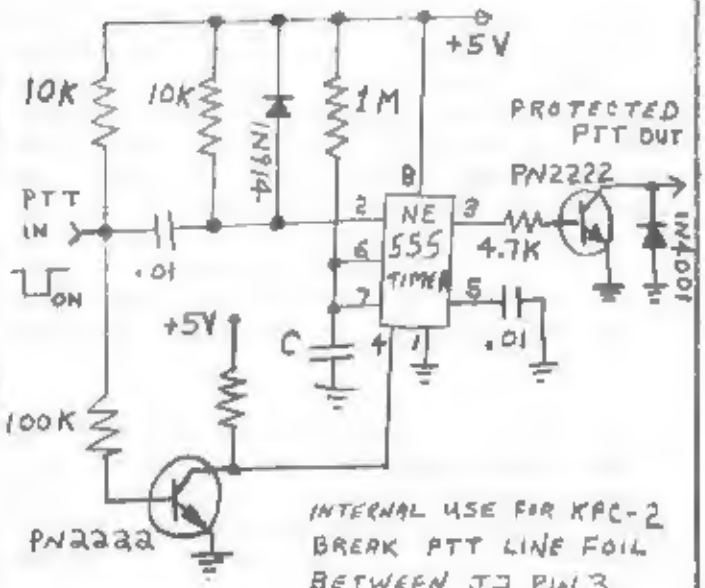
The HIP Shack is privately owned, and is operated as a service to local ham radio and SWL folk. The BBS can be reached at 303/593-0766, at 300/1200/2400 baud, from about 4am to 1am daily.

DAYTON ARA $1000. SCHOLARSHIPS

The Dayton Amateur Radio association is now accepting applications for its annual $1000. scholarships. Licenced amateurs graduating from high school in 1987 are eligible. For info and application forms:

DARA Scholarships
317 Ernst Ave
Dayton, Ohio 45405

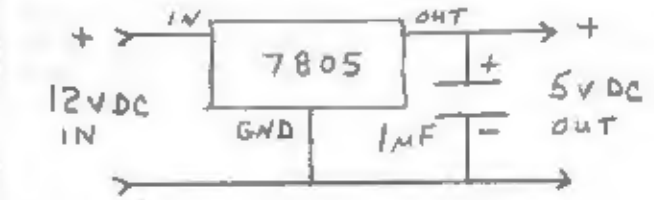
WATCHDOG TIMER



C = 100μf gives about 2 min before turnoff. Increasing C will increase turnoff time.

Timer circuit supplied by KANTRONICS

For External use - construct 5v regulator below and install timer between TNC and radio.



7805 IC is a RADIO SHACK #276-1770

12V can be derived from J2 pin 7. This circuit only draws 9ma, so it should not overtax the 300ma supply supplied by the TNC.

Thanks to Ed, WØLJF for this circuit

VHF/HF PACKET MODEM SWITCH
downloaded from N3EUA BBS

Press release

"AMATEUR PACKET ALASKA announces the availability to the amateur packet community of the APA VHF/HF switch. The APA switch is designed to allow the TAPR TNC2 or TNC1 (or any close clone such as AEA, MFJ, PacComm, Heath, GLB) to be instantly switched from VHF/1200 Baud to HF/300 Baud without retuning or calibration. The switch is based on the 4066 quad CMOS integrated circuit and can be switched manually or by logic supplied externally; a simple toggle switch is provided. It is supplied in kit form and is furnished with prime 1% precision temperature stable parts.

The APA switch, which has been operational in the AMATEUR PACKET ALASKA network for several months, is easy to build and install and comes with step-by-step instructions. Assembly and installation usually takes less than an hour. The switch is totally enclosed within the TNC cabinet and requires no drilling of the PC board.. In operation the switch provides a new set of calibration pots for 300 baud operation. The TNC's original calibration components are used for 1200 baud operation.

The price of the APA switch kit including airmail postage is $30 by check or money order. As an all volunteer organization, APA is not equipped to receive telephone or credit card orders. APA also has available a 15 page monograph on VHF/HF switch designs for an SASE and $3 to cover copying costs (1WI note -- this is the document referred to in the original message above).

AMATEUR PACKET ALASKA is a nonprofit educational, research and public service organization dedicated to linking Alaska and the World by Amateur Packet Radio. The organization can be reached at the following address:

AMATEUR PACKET ALASKA
AX.25 Communications Trail
Ester AK 99725
- - - - - - - - - - - -

IWI note: Yep, that address is correct! Dog Path Road was re-named. Ester is a small gold mining town near Fairbanks, the home of the infamous Malamute Saloon (I know it well). The KL7 group are seriously experimenting with meteor-scatter packet and also have a 400+ mile single digipeater path between Fairbanks and Anchorage that involves a double billiard-ball bounce off opposite sides of 20,000 foot Mt. McKinley. 73, Tom.

AURORA SWAPFEST

29 MARCH

6th Annual Aurora Repeater Assoc. Swapfest will be held at:

Colorado National Guard Armory
55 S. Potomac St.
1 block west of I-225,
between 6th and Alameda.

Talk-in on 147.75/.15

Info: call Jan KA7TYU 388-5918

MARCH MEETING

The next regularly scheduled meeting of the Pikes Peak Radio Amateur Association will be held on Wednesday, March 11 at 7:30 PM at Giuseppe's Depot at 810 S. Sierra St. The program will feature *Brad KDØVM on Lightning.* This talk should be of particular interest with the lightning season soon to be upon us.

MINUTES OF FEBRUARY GENERAL MEETING
submitted by Al NØCMW, secretary

The general meeting of the Pikes Peak Radio Amateur Association was held at Giuseppe s Old Depot Restaurant, Wednesday evening 11 February 1987. The meeting was called to order by the president Don KEØGJ at 19:30. Don asked all the members and guests to introduce themselves. There were 46 members and 12 guests in attendance. Notable guests were Marshal Quist AGØX, Director of the Rocky Mountain Division of ARRL, and Scott KB6CC and his XYL Nancy N6BLE from the Pacific Division. The minutes of the last meeting were approved as printed in QST-Beat.

Committee Reports

Note: Anyone wishing to help out on any of these committees, please contact the chairman at the phone number listed. Thank you for your support.

Treasurer - Bud NØDDF (599-7699): Previous balance as of 14 Jan of $1360.06, income of $415.10 with expenses of $892.97, leaving a balance of $882.19.

Interference - Ron NKØP (593-8352): No serious complaints.

SwapFest - Jim WA9ABB (598-7543): 16 May 1987 at Rustic Hills Mall. Grand prize: ICOM 735 HF transceiver. Meeting at his house 19 Feb for anyone interested in helping. Need support of Club. Will have 2000 tickets.

Pikes Peak Hill Climb- Malcolm KE9B (488-2071): Hill climb will be Saturday 11 July 1987. Ready for volunteers. More info in March.

Education - Les KCØNC (634-3995): Tech General update class in progress. 12 full time students. VE test at Swapfest. Class to visit Ron NKOP for demo. Thanks to all the instructors.

Publicity - Rick WB7THT (599-7655): Just became chairman. Thanks Rick.

Colorado Council of Amateur Radio Clubs (CCARC) - Bud NØDDF (599-7699): We paid yearly dues of $2). Next meeting on 21 Feb in Denver. CCARC started in 1970's and is concerned with freq co-ord, litigation on towers, stolen equipment, etc.

Deaf and Blind School - Jim WA9ABB: (598-7543) Small class progressing well. 5-6 kids weekly. Plan to trade some old Collins gear. Found a company with a speech synthesizer, Need an Elmer for one student. Chris WBODHU volunteered.

Ø-Beat - Phil VE1ARC (590-7136): Thanks, and keep the articles coming.

ARES - Jim WA5BKK: (579-9129) Has application forms for joining ARES. ARES net every Wednesday at 1900 on 146.97 repeater. All welcome.

Public Service - Mike KØTER (636-1290): Walk for Mankind is Saturday April 11. Passed around a sign-up sheet. Nat will be on 146.58. Jim WA9ABB volunteered to lend 1-2 2-meter rigs to anyone for any public service event.

Club Trailer - Pete NØLA (495-4829): Still need volunteers and ideas on how to remodel the inside.

Field Day - Tom ADØD (495-2788): Wants someone to help organize FD. Needs to know where club members prefer to hold it (Rampart range or elsewhere). Considering military establishment site. Suggestion of a school parking lot. Any more ideas? Suggests Class 3A with SSB, CW and VHF stations.

VE Testing - Pete NØLA (495-4829): Next VE on Saturday, 14 February 1987 at the First United Methodist Church. Note that the fee has increased 10 cents to $4.35.

Old Business:

Jake NØCYR reported that Eisenhower Hospital has material. Plan to complete installation this week.

Jim WA9ABB reported that the emergency antenna on the Air Force Academy hospital works fine. He plugged in his handie-talkie and talked to a pilot at 27,000 feet.

Ø-Beat mailing list will now be purged of those names who have not paid their 1987 dues.

Malcolm KE9S reminded everyone of the Severe Weather classes on Apr 5, location TBA.

New Business: Nil

Announcements:

ARRL has a job opening for a Training Program manager in Newington, CT.

The Dayton Amateur Radio Assoc. has announced its 1987 high school scholarship of $1000.

Aurora SwapFest on 29 March.

Prizes - Ron NKØP:

Winners were:

--	Bob	ARRL 87 Handbook
KAØZHP	Shannon	$10. Wintronics cert.
--	Bob	$10. Centennial cert.
KAØNLI	Larry	Soldering gun
KAØWIE	Al	Village Inn breakfast
NØCYR	Jake	OEM bag of parts.

Program:

Guest Speaker was Marshal Quiot ABØX, director of the Rocky Mtn Division of ARRL. He spoke of the recent Novice enhancement, and PRB 3 proposing callsigns be issued by amateurs. He talked at length on the issue of ordinances, towers and antennas. It was gratifying to see that amateur concerns are being addressed by such capable amateurs as Marshall. Excellent presentation!

The meeting was adjourned at 21:50. The next meeting will be 11 March 1987.

MINUTES OF FEBRUARY BOARD MEETING
submitted by Al NØCMW

The board meeting was held on Monday Feb 16 at the home of Bud NØDDF. All board members had fun finding it as he has one of these nice Colorado Springs addresses with address on one street and driveway and access to house on a different street. In attendance were Bud NØDDF, Al NØCMW, Chris WBØDHU, Don KEØGJ, Nick KG5N, Ron NKØP and Phil VE1ARL.

Board wants to thank members for refraining from smoking at last meeting.

Secretary will submit the 1987 ARRL Annual Club Report form.

Those who may want to help on any committee, please contact committee chairman or your President. Phone numbers are listed in minutes of the general meeting. It was suggested that committee reports should be limited to 5 minutes at the general meetings.

The swapfest tickets have been ordered, all 2000 of them.

We now have a tax ID, so Bud NØDDF is moving our account to the ENT FEDERAL CREDIT UNION.

A discussion was held on what to have as prg for future meetings. Any members with good ideas contact one of your board members. March program will be on Lightning by Brad KDØVM.

No further business board ajourned at 9pm. Location of next Board meeting TBA.

Membership Application

PIKES PEAK RADIO AMATEUR ASSOCIATION, INC.

P.O. Box 16521
Colorado Springs, CO 80935

Name _____

Address _____

City _____ State _____ Zip _____

Call _____ License Class _____

Are You An ARRL Member? ☐ Yes ☐ No Telephone _____

☐ Full Member $12.00 ☐ Family Membership $15.00 ☐ Newsletter Only $4.00
☐ Age 65 or older, or under 18 $8.00

Additional Names _____ Call _____ Class _____

_____ _____ _____

_____ _____ _____

Associate Member $8.00 ☐ (Outside Teller & El Paso Counties.)